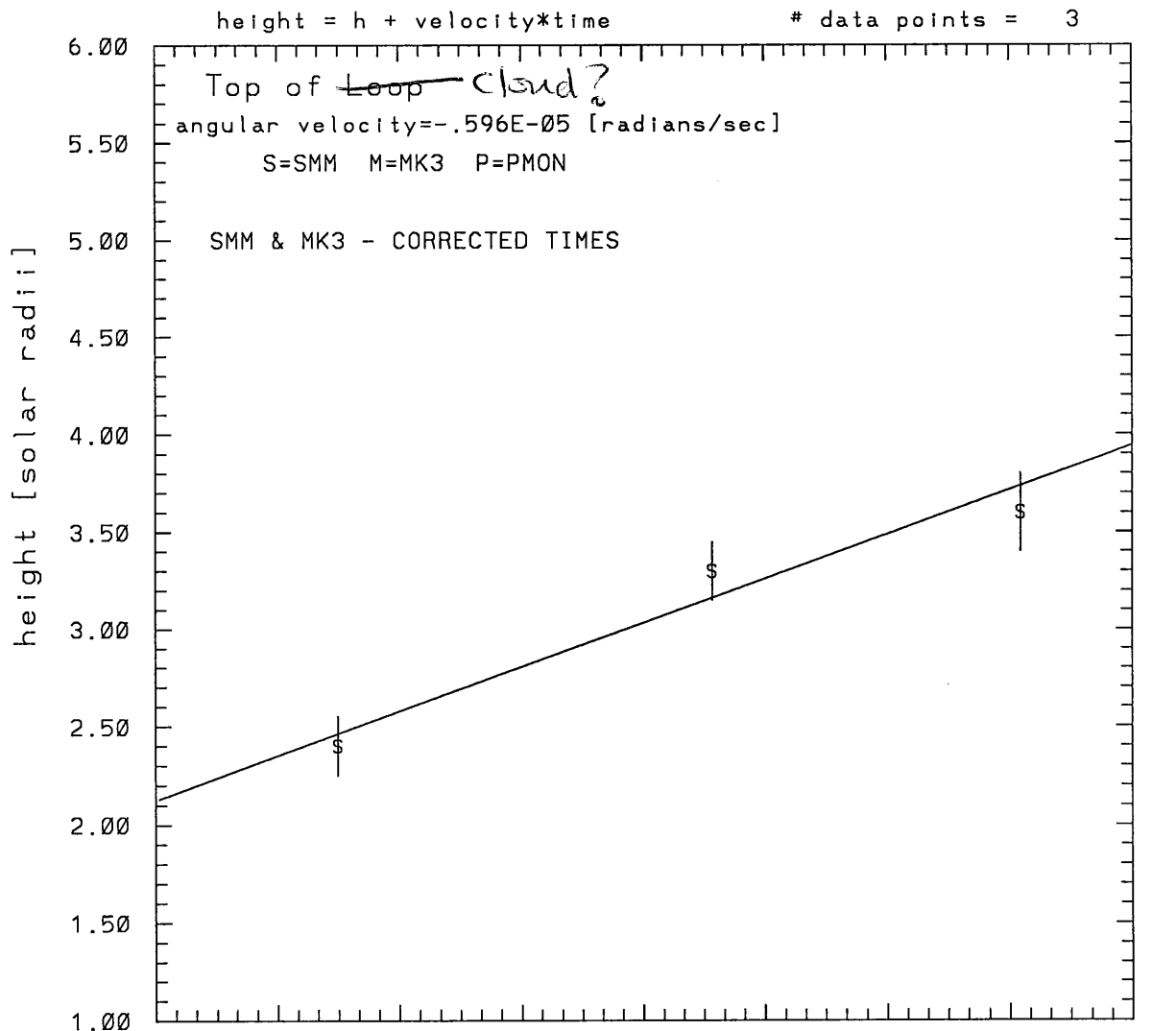


SMM C/P 1989 DOY234 266 +/- 2 degrees

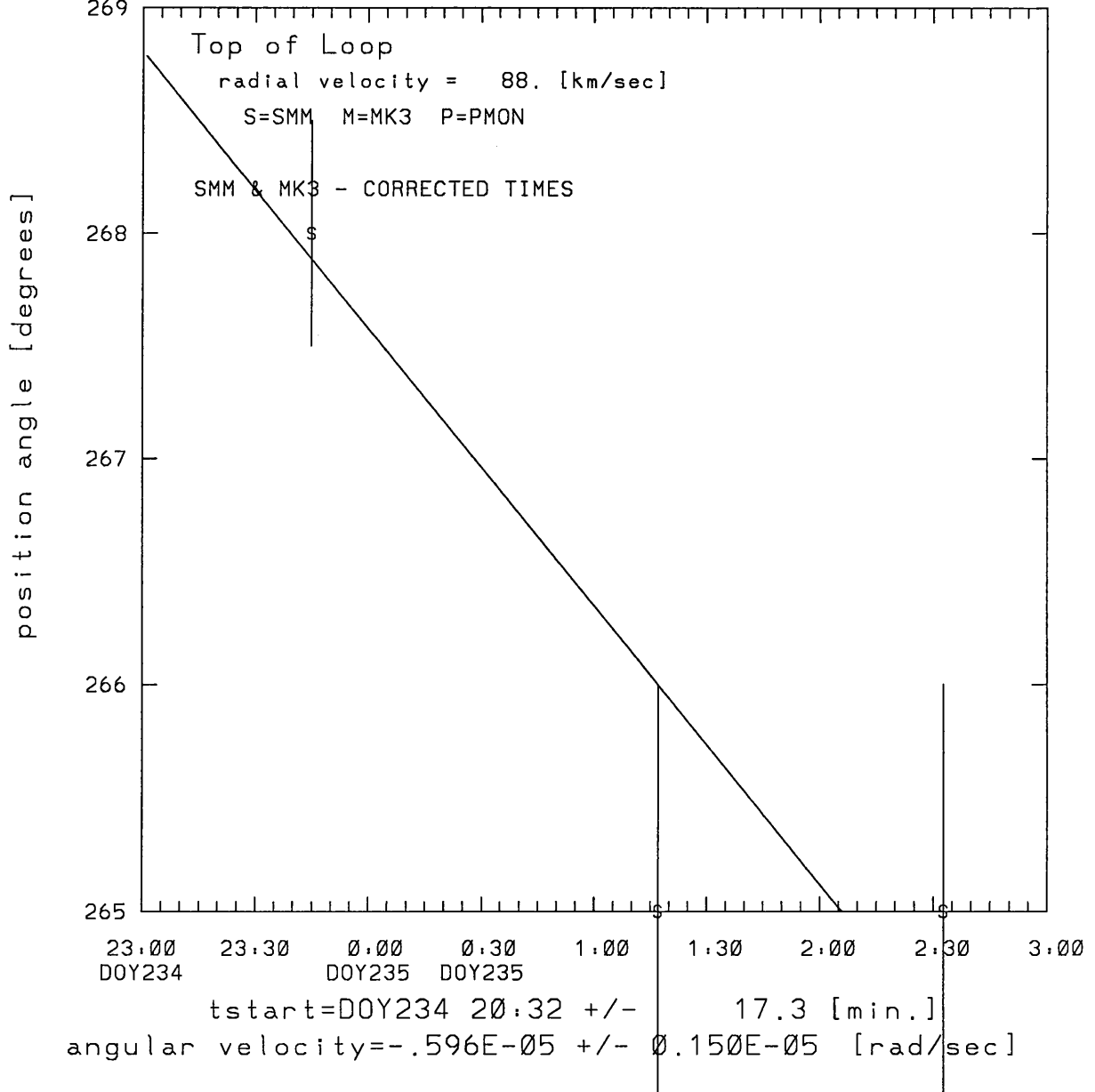


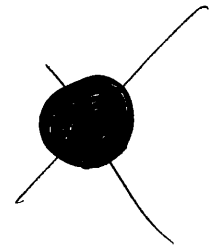
23.00 23.30 0.00 0.30 1.00 1.30 2.00 2.30 3.00
DOY234 DOY235 DOY235

tstart=DOY234 20:32 +/- 17.3 [min.]
radial velocity= 88. +/- 14. [km/sec]

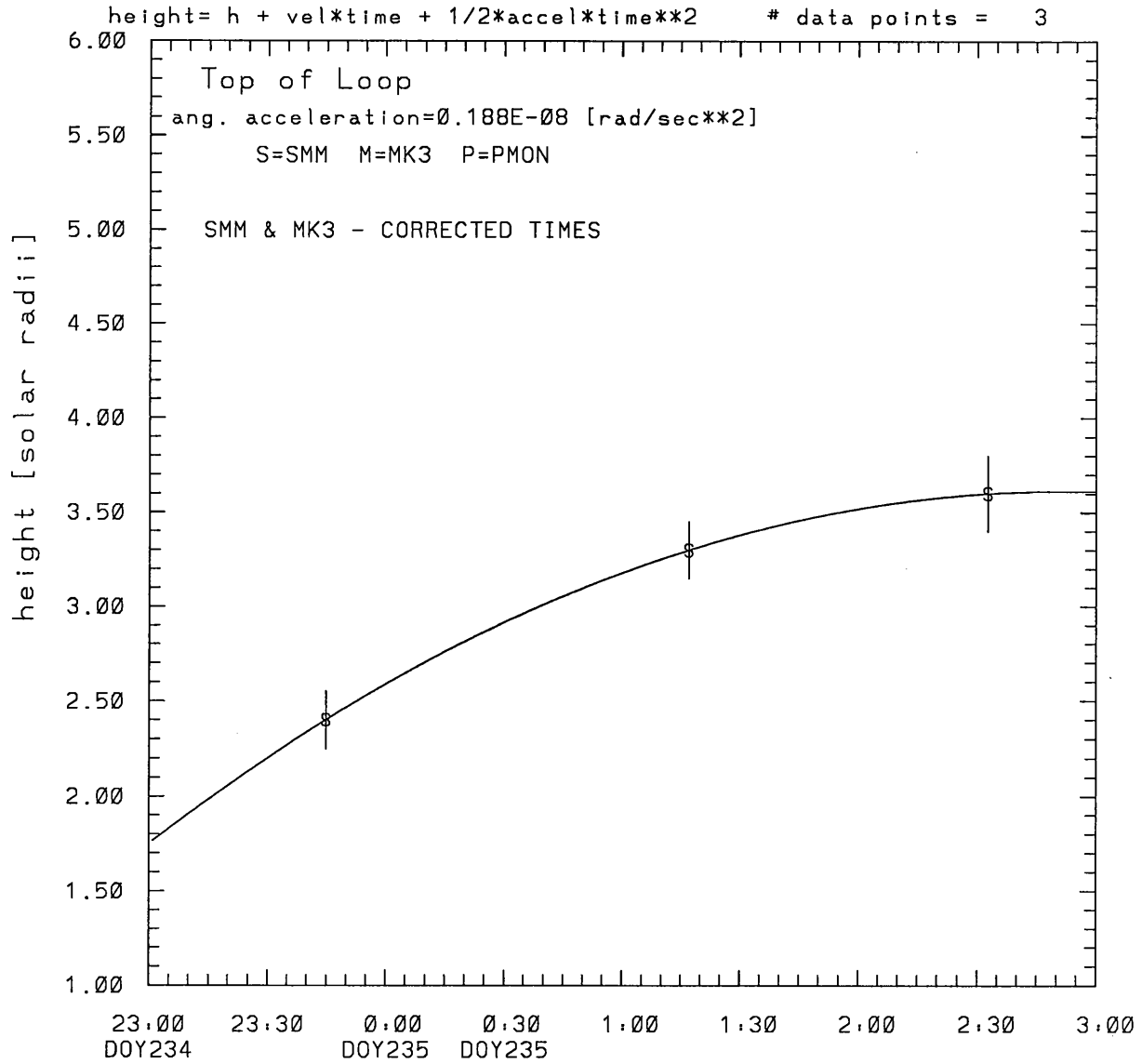
SMM C/P 1989 DOY234 266 +/- 2 degrees

angle = initial angle + angular velocity * time # data points = 3





SMM C/P 1989 DOY234 266 +/- 2 degrees



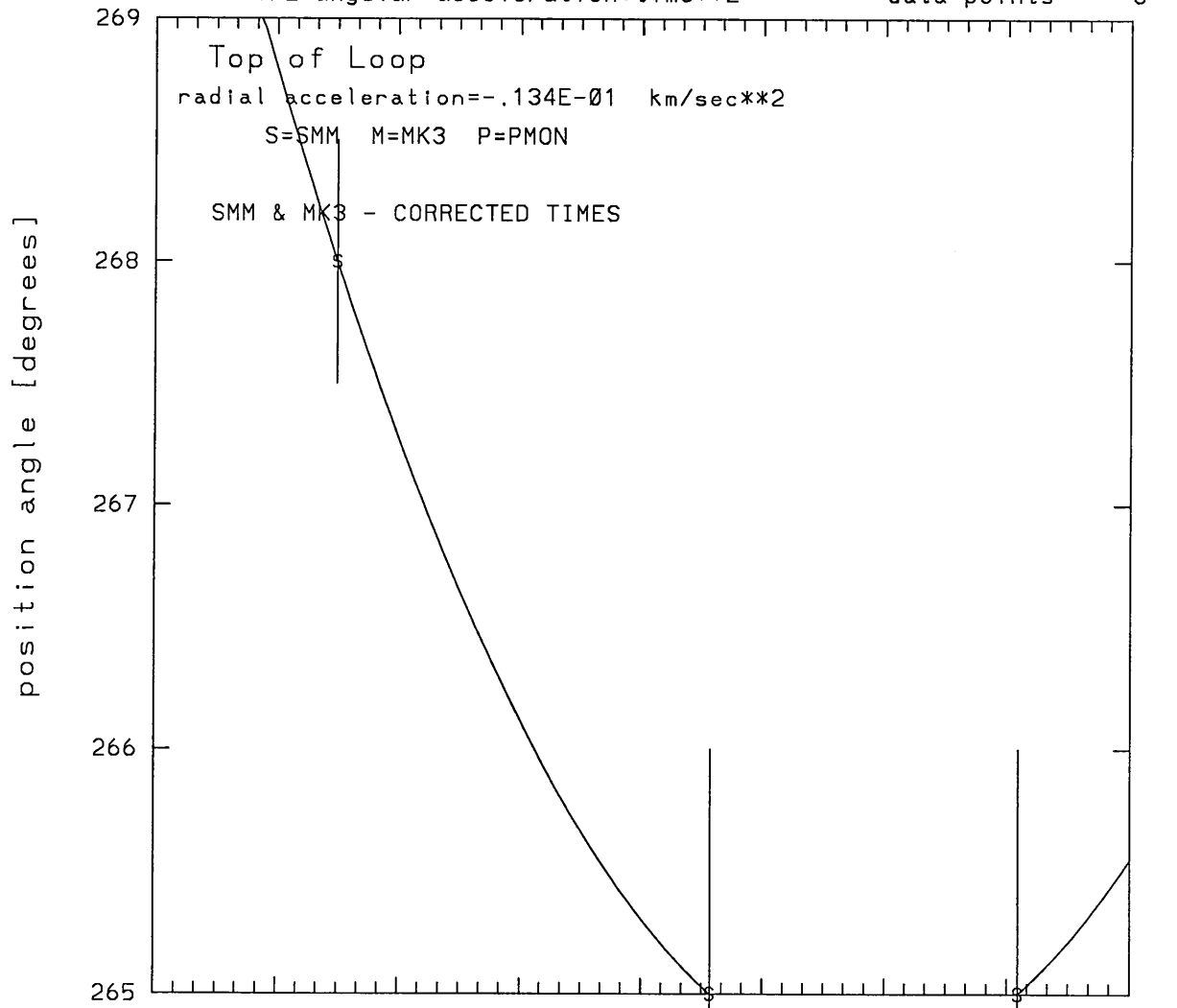
tstart = DOY234 22:19 +/- 0.0 [min.]

radial acceleration = $-0.0134 +/- 0.0000$ [km/sec**2]

SMM C/P 1989 DOY234 266 +/- 2 degrees

angle = initial angle + angular velocity*time
+ 1/2 angular acceleration*time**2

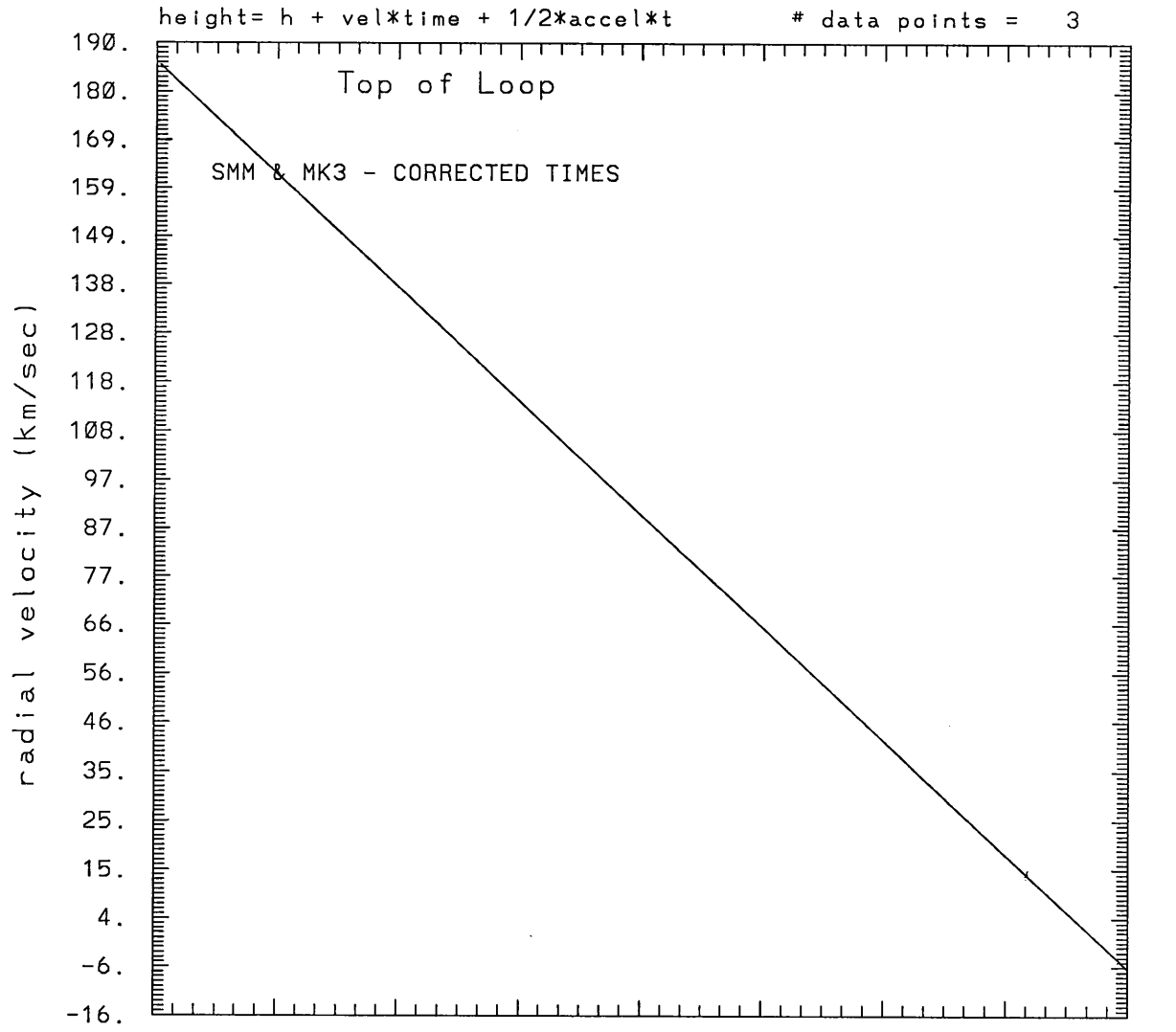
data points = 3



23:00 23:30 0:00 0:30 1:00 1:30 2:00 2:30 3:00
DOY234 DOY235 DOY235

tstart = DOY234 22:19 +/- 0.0 [min.]
angular acceleration = $0.188E-08$ +/- $0.000E+00$ [rad/sec**2]

SMM C/P 1989 DOY234 266 +/- 2 degrees



23.00 23.30 0.00 0.30 1.00 1.30 2.00 2.30 3.00
DOY234 DOY235

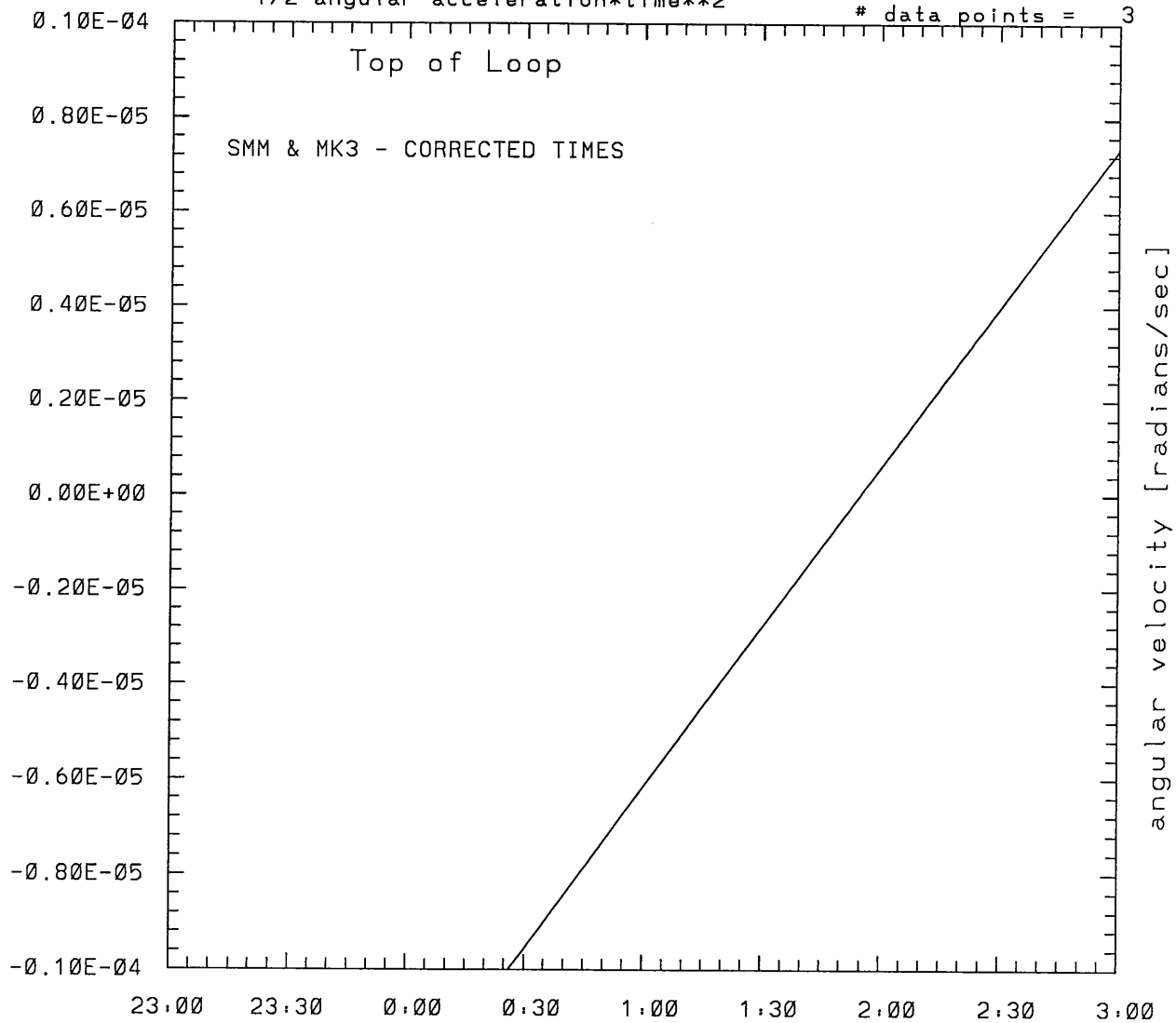
tstart=DOY234 22:19 +/- 0.0 [min.]

radial acceleration=-.134E-01 km/sec**2

SMM C/P 1989 DOY234 266 +/- 2 degrees

$$\text{angle} = \text{initial angle} + \text{angular velocity} * \text{time} + \frac{1}{2} \text{angular acceleration} * \text{time} ** 2$$

data points = 3



DOY234

DOY235

tstart=DOY234 22:19 +/- 0.0 [min.]

angular acceleration=0.188E-08 +/-

0.000E+00 [rad/sec**2]

This is a 1 order run

INPUT:

year	doy	time	radii	radius	error in angle	error in angle	datatype
1989	234	23:44:50	2.40 +/-	0.15	268.0 +/-	0.5	SMM
1989	235	1:17: 1	3.30 +/-	0.15	265.0 +/-	1.0	SMM
1989	235	2:32:41	3.60 +/-	0.20	265.0 +/-	1.0	SMM

Structure being measured:
Top of Cloud (or loop)

OUTPUT:

START TIME:

Event began at t = 0 + -0.148E+03 +/- 0.173E+02 [minutes]
In more convenient units:
Event began at DOY 234 20:32 +/- 0.173E+02 [minutes]

Origin defined at DOY234 23: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 88. +/- 14. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.212E+01 +/- 0.167E+00 [solar radii]
c(2) = 0.758E-02 +/- 0.125E-02 [radii/min]
c(2) = 0.880E+02 +/- 0.144E+02 [km/sec]
c(3) = 0.000E+00 +/- 0.000E+00 [radii/min**2]
c(3) = 0.000E+00 +/- 0.000E+00 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

error in c(1) = 0.25385E+00 [radii] see Bevington pg. 114
error in c(2) = 0.17112E-02 [radii/min] see Bevington pg. 114

ANGULAR INFORMATION:

ANGULAR VELOCITY = -0.5955E-05 +/- 0.1501E-05 [radians/sec]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 269. +/- 1. [degrees]
a(2) = -0.205E-01 +/- 0.516E-02 [degrees/min]
a(2) = -0.596E-05 +/- 0.150E-05 [rad/sec]
a(3) = 0.000E+00 +/- 0.000E+00 [degrees/min**2]
a(3) = 0.000E+00 +/- 0.000E+00 [rad/sec**2]

THE TANGENTIAL, RADIAL AND TOTAL SPEEDS AT EACH DATA POINT ARE:

The TANGENTIAL velocity at 23:44 = -10. km/sec

The RADIAL velocity at 23:44 = 88. km/sec

The TOTAL velocity at 23:44 = 89. km/sec

The TANGENTIAL velocity at 1:17 = -14. km /sec

The RADIAL velocity at 1:17 = 88. km/sec

The TOTAL velocity at 1:17 = 89. km/sec

The TANGENTIAL velocity at 2:32 = -15. km /sec

The RADIAL velocity at 2:32 = 88. km/sec

The TOTAL velocity at 2:32 = 89. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.62

Standard Deviation in start time measurement = 0.686E+02

Error in time = 0.26827E+02 using best fit method

See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.195E-01

Reduced Chi Squared = 0.972E-01

Chi Squared = 0.972E-01

The probability for exceeding chi square = 0.889E+00

The correlation coefficient = 0.975E+00

The probability that no LINEAR correlation exists between the variables = 0.14281

SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

This is a 2 order run

INPUT:

year doy	time	radii	radius	error in angle	error in angle	datatype
1989 234	23:44:50	2.40 +/-	0.15	268.0 +/-	0.5	SMM
1989 235	1:17: 1	3.30 +/-	0.15	265.0 +/-	1.0	SMM
1989 235	2:32:41	3.60 +/-	0.20	265.0 +/-	1.0	SMM

Structure being measured:
Top of Cloud (or loop)

OUTPUT:

START TIME:

Event began at $t = 0 + -0.428E+02 +/- 0.000E+00$ [minutes]
In more convenient units:
Event began at DOY 234 22:19 +/- 0.000E+00 [minutes]

Origin defined at DOY234 23: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = $-0.134E-01 +/- 0.603E-07$ km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.175E+01 +/- 0.199E-05 [solar radii]
c(2) = 0.160E-01 +/- 0.390E-07 [radii/min]
c(2) = 0.186E+03 +/- 0.452E-03 [km/sec]
c(3) = -0.345E-04 +/- 0.156E-09 [radii/min**2]
c(3) = -0.134E-01 +/- 0.603E-07 [km/sec**2]

ANGULAR INFORMATION:

ANGULAR ACCELERATION= $0.1880E-08 +/- 0.0000E+00$ [radians/sec**2]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 271. +/- 0. [degrees]
a(2) = -0.678E-01 +/- 0.000E+00 [degrees/min]
a(2) = -0.197E-04 +/- 0.000E+00 [rad/sec]
a(3) = 0.194E-03 +/- 0.000E+00 [degrees/min**2]
a(3) = 0.188E-08 +/- 0.000E+00 [rad/sec**2]

THE TANGENTIAL, RADIAL AND TOTAL SPEEDS AT EACH DATA POINT ARE:

The TANGENTIAL velocity at 23:44 = -24. km /sec

The RADIAL velocity at 23:44 = 150. km/sec

The TOTAL velocity at 23:44 = 152. km/sec

The TANGENTIAL velocity at 1:17 = -10. km /sec

The RADIAL velocity at 1:17 = 76. km/sec

The TOTAL velocity at 1:17 = 77. km/sec

The TANGENTIAL velocity at 2:32 = 11. km /sec

The RADIAL velocity at 2:32 = 16. km/sec

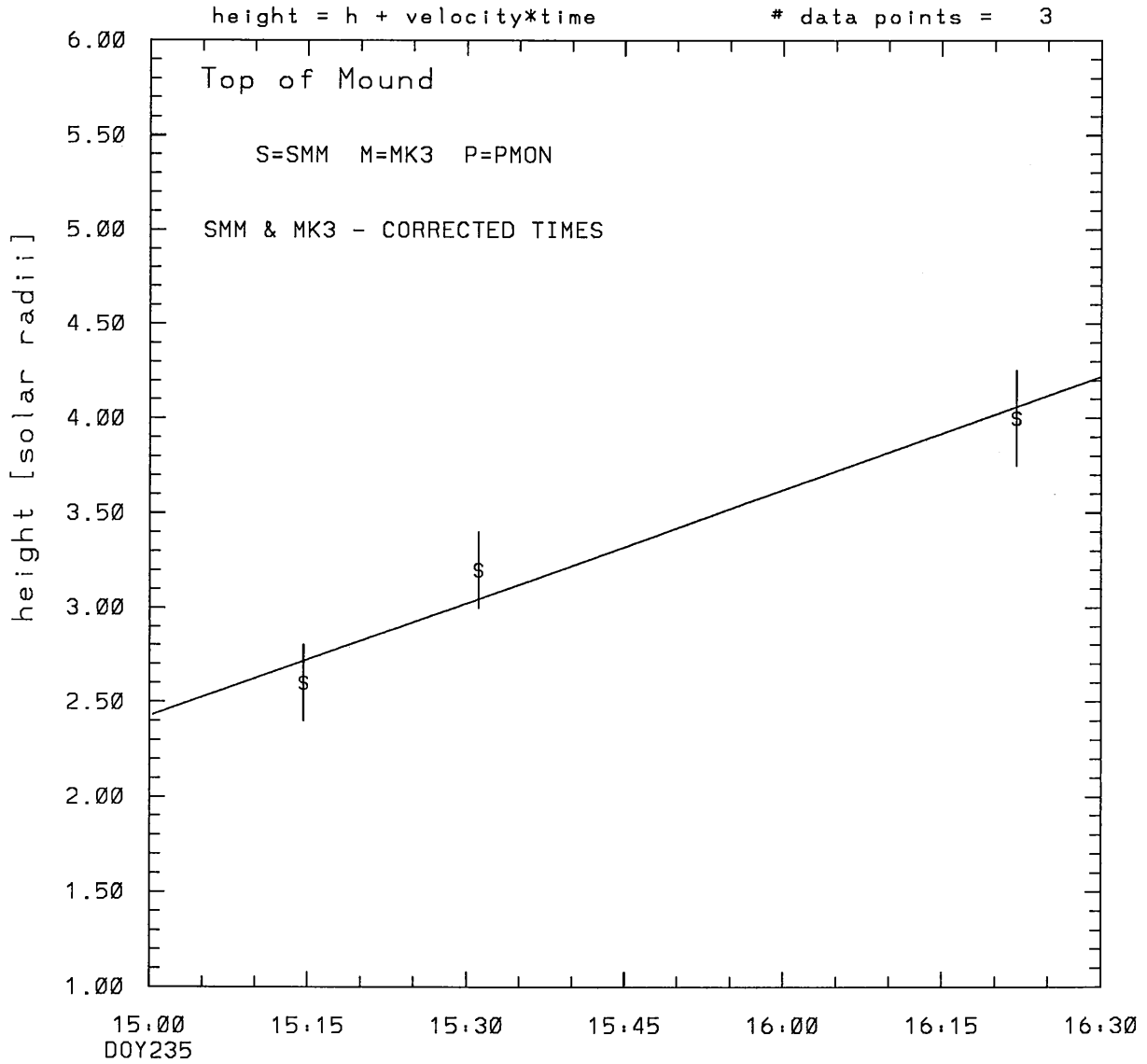
The TOTAL velocity at 2:32 = 19. km/sec

The following info is for estimating goodness of the fit

Number data points = number of coefficients. No error analysis is possible.

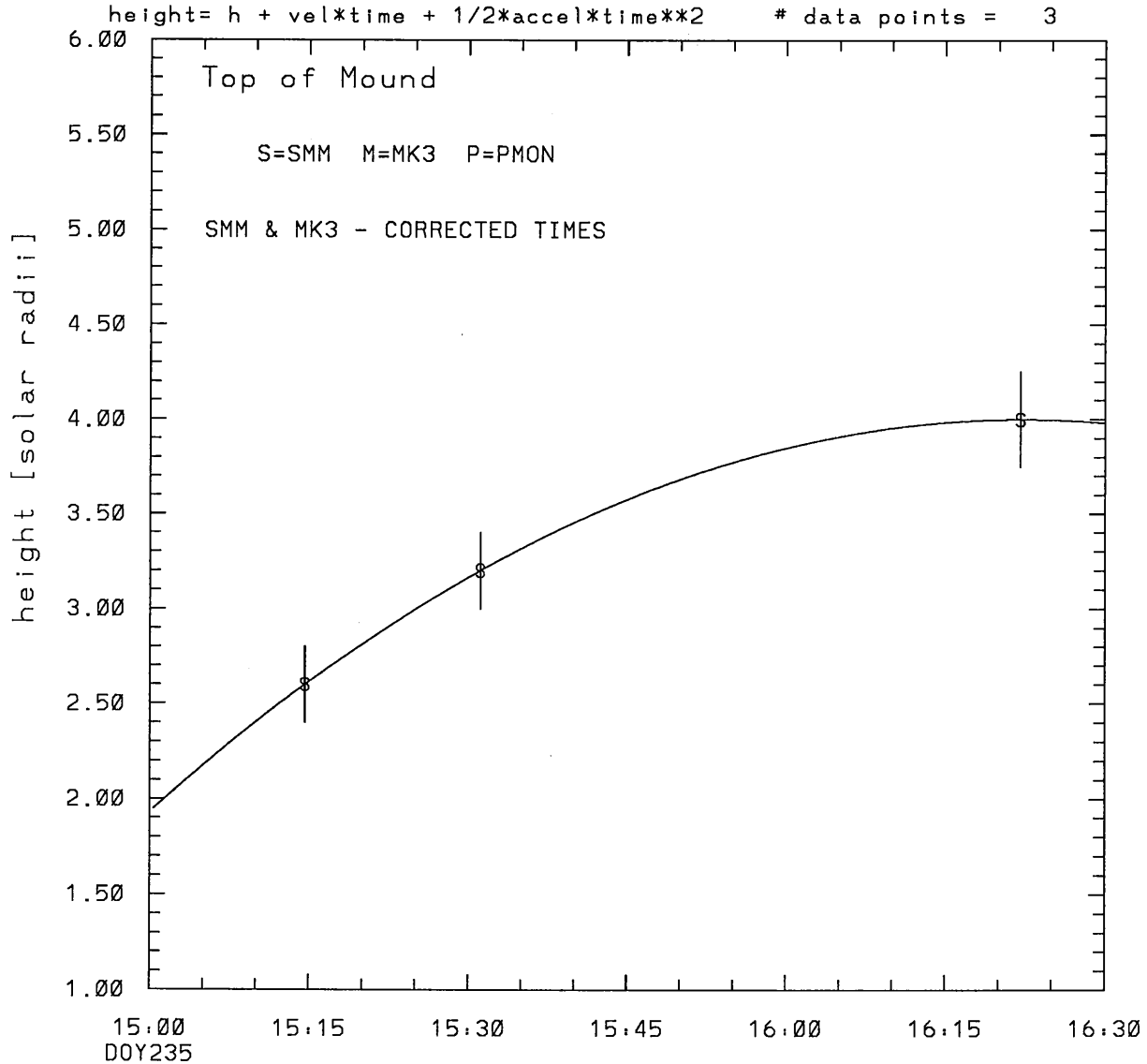
Correlation coefficient is not computable!

SMM C/P 1989 DOY235 295 +/- 0 degrees



tstart=DOY235 13:50 +/- 7.4 [min.]
radial velocity= 231. +/- 38. [km/sec]

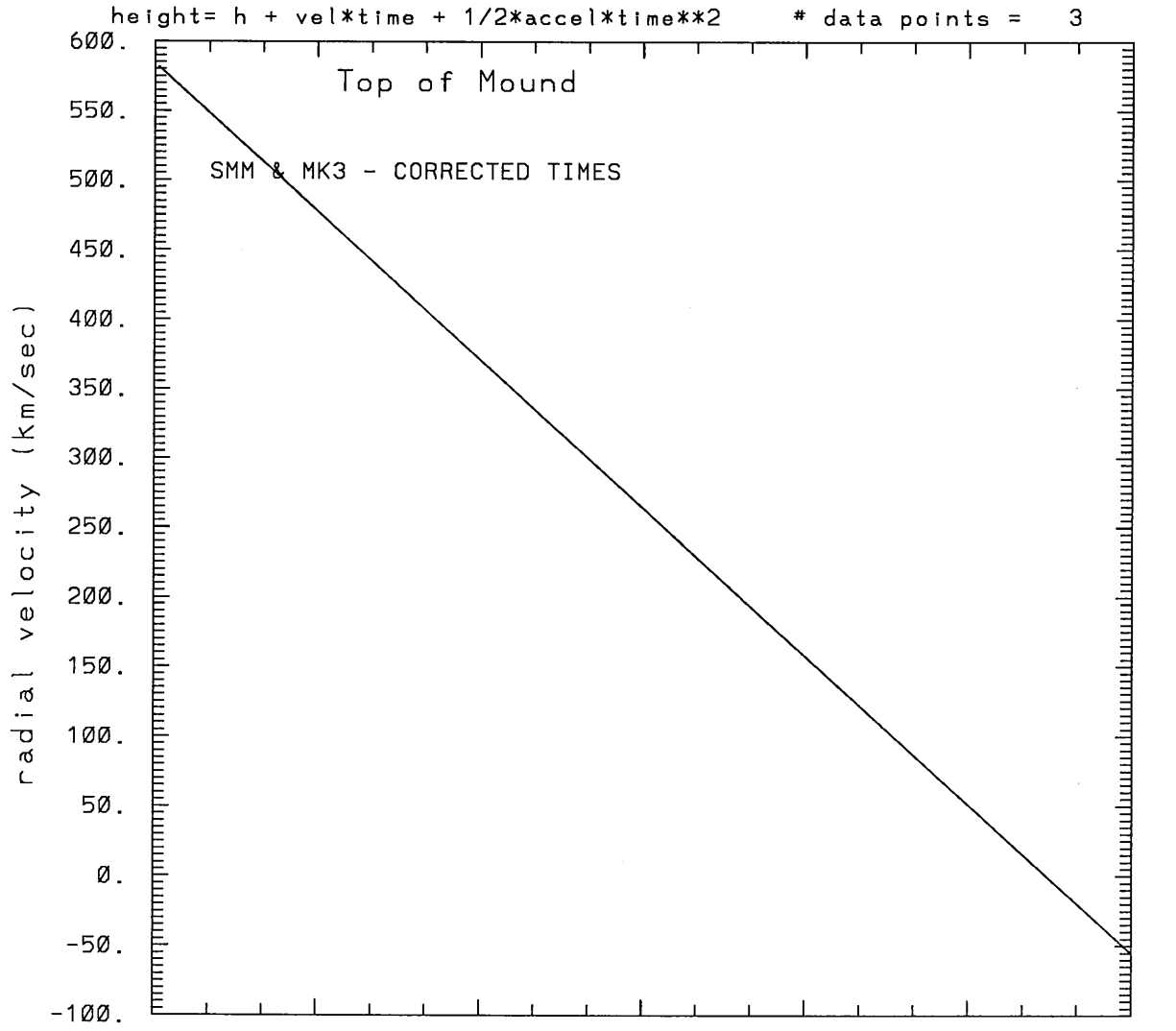
SMM C/P 1989 DOY235 295 +/- 0 degrees



tstart=DOY235 14:45 +/- 0.0 [min.]

radial acceleration=-0.1184 +/- 0.0000 [km/sec**2]

SMM C/P 1989 DOY235 295 +/- 0 degrees



15:00
DOY235

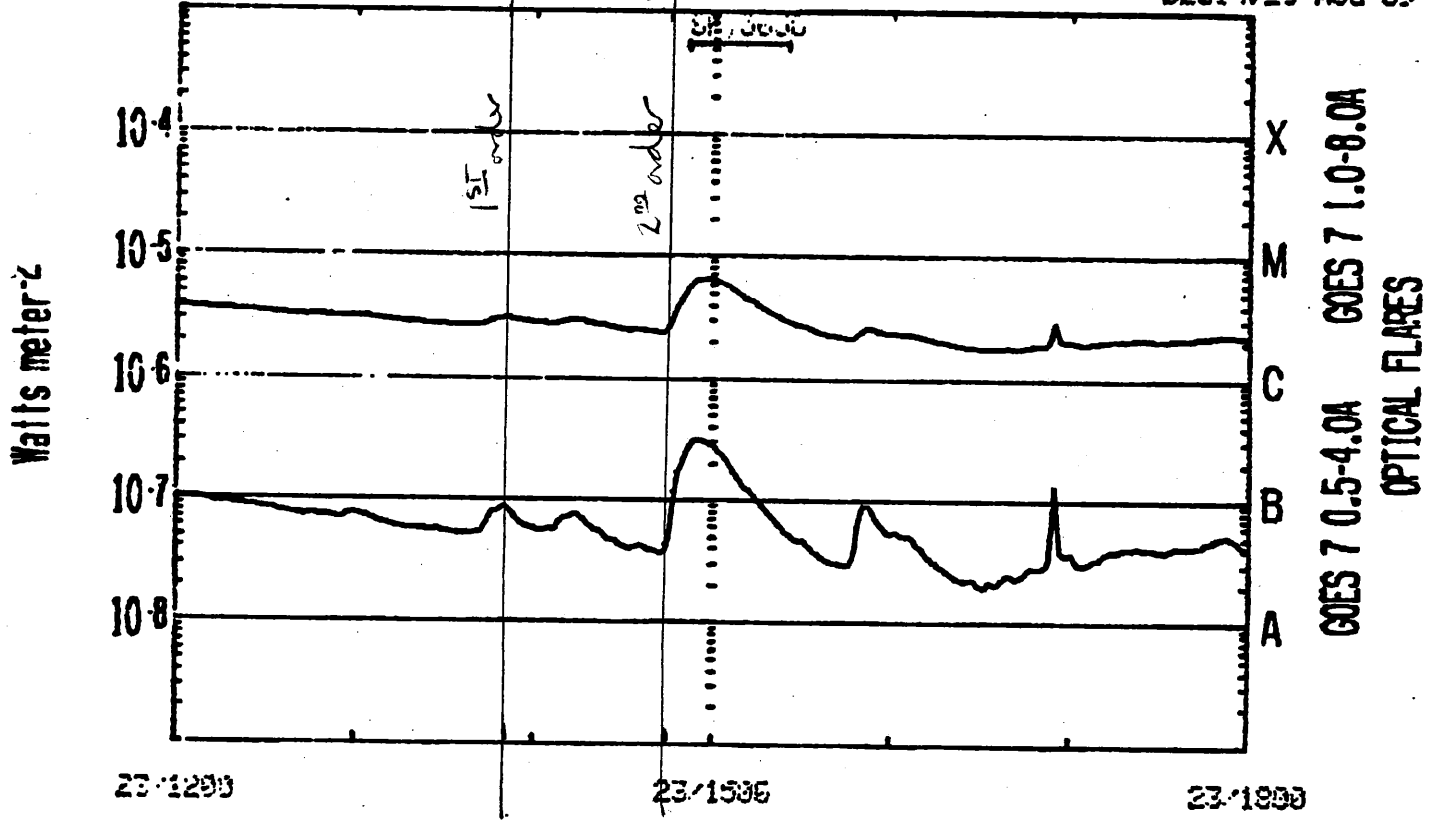
tstart=DOY235 14:45 +/- 0.0 [min.]

radial acceleration=-.118E+00 km/sec**2

1989 DOY 235

1989 and OTHER DATA TOGETHER

BEGIN: 23 AUG 89



GOES 7 0.5-4.0A GOES 7 1.0-8.0A
OPTICAL FLARES

SAA's
NIGHT

GOES-7 1 MIN DATA; OPTICAL FLARE DUR, IMP, REGION

RUN: 1403UT
23 AUG 89

This is a 1 order run

INPUT:

year	day	time	radii	error in radius	angle	error in angle	datatype
1989	235	15:14:37	2.60	+/- 0.20	295.0	+/- 0.5	SMM
1989	235	15:31: 7	3.20	+/- 0.20	295.0	+/- 1.0	SMM
1989	235	16:22: 1	4.00	+/- 0.25	295.0	+/- 1.0	SMM

Structure being measured:
Top of Mound

OUTPUT:

START TIME:

Event began at $t = 0 + -0.716E+02 +/- 0.737E+01$ [minutes]

In more convenient units:

Event began at DOY 235 13:50 +/- 0.737E+01 [minutes]

Origin defined at DOY235 15: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 231. +/- 38. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.243E+01 +/- 0.150E+00$ [solar radii]
 $c(2) = 0.199E-01 +/- 0.329E-02$ [radii/min]
 $c(2) = 0.231E+03 +/- 0.382E+02$ [km/sec]
 $c(3) = 0.000E+00 +/- 0.000E+00$ [radii/min**2]
 $c(3) = 0.000E+00 +/- 0.000E+00$ [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

error in $c(1) = 0.20934E+00$ [radii] see Bevington pg. 114

error in $c(2) = 0.40772E-02$ [radii/min] see Bevington pg. 114

ANGULAR INFORMATION:

ANGULAR VELOCITY = 0.0000E+00 +/- 0.0000E+00[radians/sec]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 295. +/- 0. [degrees]
a(2) = 0.000E+00 +/- 0.000E+00 [degrees/min]
a(2) = 0.000E+00 +/- 0.000E+00 [rad/sec]
a(3) = 0.000E+00 +/- 0.000E+00 [degrees/min**2]
a(3) = 0.000E+00 +/- 0.000E+00 [rad/sec**2]

THE TANGENTIAL AND TOTAL VELOCITIES AT EACH DATA POINT ARE:

The TANGENTIAL velocity at 15:14 = 0. km/sec

The TOTAL velocity at 15:14 = 231. km/sec

The TANGENTIAL velocity at 15:31 = 0. km/sec

The TOTAL velocity at 15:31 = 231. km/sec

The TANGENTIAL velocity at 16:22 = 0. km/sec

The TOTAL velocity at 16:22 = 231. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.70

Standard Deviation in start time measurement = 0.287E+02

Error in time = 0.10171E+02 using best fit method

See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.226E-01

Reduced Chi Squared = 0.719E-01

Chi Squared = 0.719E-01

The probability for exceeding chi square = 0.880E+00

The correlation coefficient = 0.979E+00

The probability that no LINEAR correlation exists between the variables = 0.1300E+00

SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

This is a 2 order run

INPUT:

year	day	time	radii	error in radius	angle	error in angle	datatype
1989	235	15:14:37	2.60	+/- 0.20	295.0	+/- 0.5	SMM
1989	235	15:31: 7	3.20	+/- 0.20	295.0	+/- 1.0	SMM
1989	235	16:22: 1	4.00	+/- 0.25	295.0	+/- 1.0	SMM

Structure being measured:
Top of Mound

OUTPUT:

START TIME:

Event began at t = 0 + -0.167E+02 +/- 0.000E+00 [minutes]

In more convenient units:

Event began at DOY 235 14:45 +/- 0.000E+00 [minutes]

Origin defined at DOY235 15: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = -0.118E+00 +/- 0.120E-05 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.193E+01 +/- 0.545E-05 [solar radii]
c(2) = 0.504E-01 +/- 0.311E-06 [radii/min]
c(2) = 0.584E+03 +/- 0.361E-02 [km/sec]
c(3) = -0.306E-03 +/- 0.309E-08 [radii/min**2]
c(3) = -0.118E+00 +/- 0.120E-05 [km/sec**2]

ANGULAR INFORMATION:

ANGULAR ACCELERATION= 0.0000E+00 +/- 0.0000E+00[radians/sec**2]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 295. +/- 0. [degrees]
a(2) = 0.000E+00 +/- 0.000E+00 [degrees/min]
a(2) = 0.000E+00 +/- 0.000E+00 [rad/sec]
a(3) = 0.000E+00 +/- 0.000E+00 [degrees/min**2]

$$a(3) = 0.000E+00 \pm 0.000E+00 \text{ [rad/sec**2]}$$

THE TANGENTIAL AND TOTAL VELOCITIES AT EACH DATA POINT ARE:

The TANGENTIAL velocity at 15:14 = 0. km/sec

The TOTAL velocity at 15:14 = 480. km/sec

The TANGENTIAL velocity at 15:31 = 0. km/sec

The TOTAL velocity at 15:31 = 363. km/sec

The TANGENTIAL velocity at 16:22 = 0. km/sec

The TOTAL velocity at 16:22 = 1. km/sec

The following info is for estimating goodness of the fit

Number data points = number of coefficients. No error analysis is possible.

Correlation coefficient is not computable!